

ZF 104CARD™ 486

*Complete 486SX 100MHz
PC/AT motherboard
functionality in a
PC/104 form factor*



**100 MHz 80486SX
PC/104 CPU module**

**2MB DRAM
expandable to 18 MB**

4MB Flash Memory

**Fully implemented PC/AT
motherboard feature set**

4 serial and 2 parallel ports

**Rapid integration:
Proven PC compatibility
Standard motherboard feature set**



The ZF 104Card 486 takes the OEMmodule™ 486 Single Component Computer and fits it onto a complete PC/104-compatible system controller measuring just 3.6 inches by 3.8 inches. It offers you the quickest route to integrating a full 80486SX AT-compatible computer into your OEM design using the PC/104 form factor. By combining the system hardware, software and solid-state mass storage, the ZF 104Card 486 lowers your exposure to possible development risks and significantly reduces your time-to-market. Its unique feature set makes the ZF 104Card 486 ideal for product designs that take advantage of the PC/104 form factor.

Complete feature set

The ZF 104Card 486 contains all standard motherboard functions including 2MB DRAM, 100MHz CPU, serial and parallel I/O, floppy and EIDE disk controllers, AT-compatible BIOS, Caldera DR-DOS™ (pre-loaded), General Software's Embedded DOS-ROM™, and user-available internal flash for total solid-state operation. This feature set optimizes the OEM designer's ability to quickly incorporate IBM PC/AT hardware, software and bus compatibility within proprietary product designs. You also have the option of adding 2 serial ports, 1 parallel port and up to 16MB flash if needed.

Quicker design cycle, shorter time-to-market

Designed from inception for use in embedded systems, the ZF 104Card 486 requires minimal external components. The embedded BIOS and DOS enable you to develop software on your desktop PC/AT then easily transfer your development work to the embedded system with little or no modification. The PC/104 form factor also allows easy expansion and system configuration flexibility due to the large number of PC/104 peripheral modules available worldwide.

Full compatibility

Since the ZF 104Card 486 is fully compatible with the PC/AT Industry Standard Architecture (ISA) you gain access to:

- Proven architecture supported by hundreds of PC/104 and ISA bus suppliers.
- Cost-effective, readily available development tools and operating systems.
- Largest base of standard software applications.

Reduce manufacturing costs

Unlike less integrated PC/104 CPUs, the ZF 104Card 486 comes standard with 4 serial and 2 parallel ports thus eliminating as many as two additional PC/104 peripheral modules. With the ZF 104Card 486 you minimize complex inventory management and system assembly as well as simplify field service requirements.



We Make Computing Invisible

SPECIFICATIONS

ZF 104Card™ 486 Features

486SX-100MHz CPU

- Full 32-bit internal architecture.
- Cost effective 16-bit hardware environment.
- Virtual memory, paging and hardware enforced protection.
- Physical memory space of up to 18 MB.

DRAM Controller Supports

- High performance MUXed DRAM interleave, CPU pipelined operation.
- Page mode and 2-way interleaving.
- Shadow RAM.
- Multiple context EMS support.

PC Core Logic with PC/AT compatibility

- DMA controllers.
- Interrupt controllers.
- Timer/counters.
- AT keyboard controller.
- Realtime clock.

ISA Bus

- Compliant with standard PC/AT expansion bus with an IRQ and DMA channel subset.

Fail-safe Boot ROM™

- Embedded ROM.
- Boot to a pre-determined, factory defined state regardless of the internal BIOS flash memory's condition.
- Full flash memory restore functionality via the serial port.
- Recover easily from the corruption or loss of CPU boot data.

Watchdog Timer

- Programmable tickle sources.
- Automatic reset or NMI (jumper selectable) if user application goes out of control.

Serial Ports

- Four 16550-compatible serial ports (two on the OEMmodule 386, two additional external).

Parallel Ports

- Two bi-directional AT-compatible printer ports (one on the OEMmodule 386, one additional external).

Floppy Disk Controller

- Software compatible with the CMOS 765B controller for one to two drives.

- Integrated digital data separator capable of data transfer rates up to 2Mbps.
- Requires no external components.

IDE Hard Drive Interface

- Full 40-pin interface to standard IDE hard disk drive.
- Supports up to two IDE drives (master/slave).
- LED activity light support.

Solid State Flash Memory Device

- 2MB Internal Flash Memory in OEMmodule with 1.44MB (formatted) Solid State Disk available for OEM software use (normally the boot drive).
- Expandable up to 16MB additional on-board.

PC BIOS

- Preloaded, highly customized version of General Software's Embedded BIOS.
- Standard AT BIOS functionality.
- Support for OEM add-ons and special customization.
- **SETUP** information stored in non-volatile flash EPROM allows battery-free operation.
- Shadowed in DRAM for optimum performance.

Embedded DOS

- Caldera DR-DOS core preloaded and customized for OEMmodule 486.
- General Software Embedded DOS-ROM available free of charge.
- Support for standard DOS software.

Electrical Specifications

- +5V only $\pm 5\%$ operation.
- 650 mA power consumption.

Mechanical/Environmental

- **PC/104:** 16-bit double stackthrough bus, four mounting holes.
- **Size:** 3.6" x 3.8" x 0.9" (91.4 mm x 96.5 mm x 22.9 mm).
- **Operating temperature:** 32°F to 158°F (0°C to 70°C). Extended temperature range available. Contact factory for additional information.
- **Storage temperature:** -67°F to 212°F (-55°C to 100°C).
- **Relative humidity:** 5% to 95% non-condensing.
- **Weight:** 3.6 oz. (102 gm).

Ordering Information:

104-486-K-01

ZF 104Card 486 Development Kit – PC/104 module with OEMmodule486-100MHz w/2MB DRAM and 2MB built-in flash, 2MB additional onboard flash, 4 serial and 2 parallel ports, BIOS and DOS technical manuals, cables, and utility disk.

104-486-Q-01

ZF 104Card 486 – PC/104 module with OEMmodule 486-100MHz w/ 2MB DRAM and 2MB built-in flash, SODIMM connector for memory expansion, 4 serial and 2 parallel ports, BIOS and DOS. Does not include manuals, utility disk, cables or additional onboard flash.

104-486-Q-02

ZF 104Card 486 – PC/104 module with OEMmodule 486-100MHz w/ 2MB DRAM and 2MB built-in flash, 2MB additional onboard flash, SODIMM connector for memory expansion, 4 serial and 2 parallel ports, BIOS and DOS. Manuals, utility disk and cables not included.



ZF Embedded, Inc.

Corporate Offices
1052 Elwell Court
Palo Alto, CA 94303
USA

Tel: +1-650-965-3800
Fax: +1-650-965-4050
Email: info@zfmicro.com
<http://www.zfmicro.com>

European Offices
30, rue du Morvan, Silic 558
94643, Rungis Cédex
France

Tel : +33-(0)1-41-80-04-10
Fax : +33-(0)1-41-80-04-11

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